Protective device for beverage cans

The invention relates to a protective device for beverage cans. With the help of this device contamination of the drinking surface of beverage cans can be prevented and hygienic use after opening can be granted.

Marketing of soft drinks and beers take usually place in a very wide-spread practical packaging, in metal containers. The quick spread of this packaging method resulted from the fact, that only a small amount of raw material is necessary for their production, the can is very light, it is not fragile and provides all conditions for storing of the liquid. Discharging of the content of the beverage can take place with the help of the opening part located on the top of the can in a way, that with the help of the flap on the opening part of the cover the discharging opening is made free by pushing it inside, so discharging of the content is possible.

It is a well-known fact, that the discharging of drinks results in spilling of the liquid on the top cover of the can washing away the dust and contamination accumulated there. The same problem arises when the drink is consumed directly from the can. This time the person's lips drinking from the can get in touch with the side, respectively with the upper part of the can, and contact between the consumer and the contamination is established. Despite this fact so far not much has been done in order to ensure storing and keeping tidy of the beverage cans. Producers and distributors pay relatively little attention to it.

In the state of art there are several solutions for diminishing respectively eliminating the above mentioned problem. Hungarian patent application P 99 03887 published on 28 March 2000 makes known a discharging spout that can be fixed to the top of a metal container suitable for storing soft drinks. The solution described in this patent includes a metal handle with rivets suitable for ripping open the carved breaking line of the protecting cap on the top of the metal container with the liquid. The metal handle is rigidly joined by a hammer. The handle is formed in such a way,

that it is resistant and its reinforced beaker is made suitable for ripping open the protecting cap along the breaking line at the beginning of the radial turning. Radial turning is possible due to the fact, that there is a redundant amount of metal between the rivet-hole of the riveting hammer of the handle and the part opposite to the ripping part of the hammer and this way after punching of the top and turning of the handle by maximum 180° along the sliding axis, the discharging spout can be put into an active position. During this positioning the wall-thickening placed along a rim of semicircular diameter on the outer edge of the open lower ring can be wedged in the opening of the protecting cap, and after stretching of the strip containing the redundant metal amount the hammer comes below the inner surface of the top, to the level of riveting.

Hungarian patent application P 01 04459 published on 28 March 2002 makes known a top lid provided with a tidy covering rim opening device, suitable for beverage cans. HU 217 998 Hungarian patent describes a method for hygienic gas-tight sealing beverage cans, furthermore a beverage can applicable accordingly. This method is especially suitable for cans made of aluminum provided with a grooved place serving as drink discharging opening. This method provides a protecting cover for the part in contact with the consumer's mouth. The beverage can described therein is preferably made of aluminum and it is provided with a device with a groove, that can be lifted. It is provided with an opening for discharging the liquid preferable with tongue and furthermore it is coated with a hygienic gas-tight sealing.

The disadvantage of the solutions in the state of art is that they do not comply with hygienic requirements furthermore they are complicated structures, and their production is difficult.

When working out the solution according to the invention we aimed to work out a simple device suitable for ensuring hygienic use of beverage cans after their opening.

When working out the solution according to the invention we realized, that in case we invent a device, which has a covering surface joining the upper part of the beverage can, which is a cover of circular shape covering the discharging opening of the beverage can, and on said cover there is a cutout formed in an α angle of 60°...120°, and furthermore in the bottom of the beverage can there is a fixing rim joining below the rim of the top of the beverage can, then the set aim is achieved.

The solution according to the invention is a protective device for beverage cans with a cover joining the upper part of the beverage can, which is characterized by that, the cover of the protective device is a cover of circular shape covering a discharging opening of the beverage can and a cutout is formed in α = 60°-120° degree on said cover, furthermore in the bottom of the cover there is a fixing brim joining below the brim of the lid of the beverage can.

In a preferred embodiment of the protective device, it has a skirting covering the side of the beverage can. In another preferred embodiment of the protective device, the angle of the cutout in the cover is α =80°...90°. In a further preferred embodiment of the protective device, on the outer part of the cover of the protective device ribs are formed. The material of the protective device is preferably plastic, in given case PVC or polypropylene or impregnated paper, or metal, in given case aluminum.

The description of the solution according to the invention is set forth as follows:

Figure 1 shows the view of the protective device placed on the beverage can.
Figure 2 shows the section of the protective device according to the invention placed on the beverage can 2.
Figure 3 shows the protective device according to the invention in top view, with the covered position of the discharging opening.
Figure 4 shows the protective device according to the invention in top view, with open position of the discharging opening.

Fig 1 shows the view of the protective device 1 according to the invention placed on the beverage can 2. It can be seen on Fig 1 that the protective device 1 on the beverage can 2 is in the state before opening, so the flap 4 shaped on the top of the beverage can 2 can be seen, as well as the discharging opening 9 in closed position. The protective device 1 has a cover 10 suiting to the lid 3 of the beverage can 2 and furthermore it has skirting 7 fitting on the side of the beverage can 2. Preferably there is a cutout 8 of 60°...120° angle in the cover 10 which in given case can continue downward in the skirting 7 as well. As it can be seen in Fig 1 the protective device 1 on the beverage can 2 is in the state before opening, so the flap 4 placed on the lid 3 of the beverage can 2 can be seen as well as the discharging opening 9 in closed position.

In Fig 2 the section of the protective device 1 according to the invention placed on the beverage can 2 is shown. The lid 3 of the beverage can 2 and the cover 10 fitting on the protective device 1 can be seen in the figure. As it can be seen in the figure, the protective device 1 is fixed on the beverage can 2 by the fixing brim 6 of the protective device 1, which joins below the brim 5 around the lid 3 of the beverage can 2. The part of the skirting 7 of the protective device 1 of the beverage can 2 stretching down the side of the beverage can 2 is in given case placed below it. The discharging opening 9 is located in the lid 3 of the beverage can 2 and the flap 4 is placed there as well.

Fig 3 shows the protective device 1 according to the invention in top view with the covered position of the discharging opening 9. The cutout 8 of the protective device 1 is positioned opposite the drinking surface and the protective device 1 placed on the beverage can 2 covers the discharging opening 9 located on the lid 3 of the beverage can 2. This case the flap 4 is situated in the cutout 8 above the cover 10 of the protective device 1.

Fig 4 shows the protective device 1 in top view, with the discharging opening 9 in open position. The cutout 8 of the protective device 1 placed on the beverage can 2

is this case above the discharging opening 9 of the lid 3 so the discharging opening 9 can be freely opened with the flap 4. The protective device 1 is put into this position on the beverage can 2 by turning it, during which the cover 10 of the protective device 1 turns between the lid 3 of the beverage can 2 and the flap 4. This way the flap 4 can be freely lifted, and with its lower part the discharging opening 9 can be opened and the drink can be discharged from the beverage can 2.

The opening of the beverage can 2 can take place in two ways: Either the beverage can 2 is opened first with the help of the flap 4 and the cutout 8 of the protective device 1 is turned above the discharging opening 9, or the protective device 1 is turned on the beverage can 2 before the opening in such a way, that the discharging opening 9 becomes open in the state according to the Fig 1. The cutout 8 of the protective device 1 makes it possible, that with the lifting of the flap 4 its lower part pushes the lid 3 of the beverage can 2, so the discharging opening 9 in the lid 3 becomes free along the line grooved in advance. When drinking, the consumer's mouth gets into touch with the side and lid 3 of the beverage can 2 previously covered. During discharging the liquid gets into contact with parts of the beverage can 2 only, which were previously covered by the protective device 1 according to the invention. This way the liquid can not wash away contamination from the side or of the lid 3 of the beverage can 2 during discharging.

According to a preferred embodiment of the solution according to the invention the cover 10 of the protective device 1 joins below the brim 5 of the lid 3 of the beverage can 2 folding back running around inside with a fixing brim 6 and has a skirting 7 stretching on the slanting part of the beverage can 2. On the top there is a cutout 8 of V shape stretching below the center of the lid 3 of the beverage can 2. The shape of the cutout 8 in given case is the shape of a key-hole with arched inside and with a depth leaving enough space under the flap 4 of the beverage can 2 In given case the cover 10 covers the top of the beverage can 2 till the rotation line of the flap 4. In an actual case the angle of the cutout 8 is within angle 60°...120° preferably 80°...90°.

In a preferred embodiment of the solution according to the invention the cover 10 of the protective device 1 is pressed on the lid 3 of the beverage can 2 by vacuum seal and carbon dioxide can lift it at the time of opening of the flap 4 only. This preferred embodiment is suitable for ensuring full sealing.

In given case the lateral skirting 7 can stretch as far as the bottom of the upper slanting part of the beverage can 2 or even below it ensuring in given case full cover of the part of the beverage can 2 in contact with the mouth. In given case on the outer part of the cover 10 of the protective device 1 ribs are formed helping the turning. The material of the protective device 1 according to the invention is plastic material, in given case PVC or polypropylene, or impregnated paper, or metal, in given case aluminum.

The advantage of the solution according to the invention, that it is a simple structure, can be produced with little raw material consumption and at the same time it is easy to use. The device can be produced in one mold with injection molding or pressing. It can be fixed to the beverage can during production, and it remains on the can after its opening. After discharging the liquid, it can be disposed together with the beverage can, so it causes no litter problems. The use of the device according to the invention is easy and ensures perfectly well the tidy and hygiene of the surroundings of the opening and gives full protection against dust as well.